

service manual

450
AMPLIFIER

MUSICPARTS[®]

acoustic control corporation

7949 WOODLEY AVENUE

VAN NUYS, CA 91406

(213) 997-6631

MODEL 450 PHYSICAL SPECIFICATIONS

1. CONNECTIONS

| | |
|---------------------------|-----------------------------------|
| Inputs | 2 (1/4" phone jacks, 2 conductor) |
| Speaker Outputs | 2 (1/4" phone jacks, 2 conductor) |
| Line Outputs | 2 (1/4" phone jacks, 2 conductor) |
| Booster Output | 1 (1/4" phone jack, 2 conductor) |
| In/Out Accessory | 1 (1/4" phone jack, 3 conductor) |
| Foot Switch Socket | 1 (1/4" phone jack, 3 conductor) |
| Physical Dimensions | 24-5/8"Wx7"Hx12-1/2"D |
| Shipping Weight | 30 lbs. + 5 lbs. shipping carton |

2. CONTROLS

| | |
|---|--|
| Volume | Rotary Potentiometer |
| Treble | Cut and Boost Rotary Potentiometer |
| Mid-Range | Cut and Boost Rotary Potentiometer |
| Bass | Cut and Boost Rotary Potentiometer |
| Distort | Rotary Potentiometer |
| Auxiliary Volume | Rotary Potentiometer |
| Bright Switch | Rocker Switch |
| Lead/Bass | Rocker Switch |
| Ground Reverse | Rocker Switch |
| Graphic Equalizer | 5 Section (Each section is a slide potentiometer with detent in the flat position.) |
| Power On/Off Switch and Pilot Light | Push-On/Push-Off Switch |
| Auxiliary Outlet | 3 Conductor Grounded Standard |
| Fuse | 3 Amps Slo-Blo or 5 Amps Slo-Blo |

MODEL 450 ELECTRICAL SPECIFICATIONS

1. OUTPUT

| | |
|--|---------------|
| Power output (continuous) across 4 ohm load @ less than 5% distortion | 170 Watts RMS |
| Peak power output (instantaneous) across 4 ohm load @ 5% distortion | 450 Watts |
| Power output (continuous) across 2 ohm load @ 5% distortion | 170 Watts RMS |
| Peak power output (instantaneous) across 2 ohm load @ 5% distortion | 400 Watts |

2. GAIN (All controls flat volume max.)

| | |
|--|------------------|
| Preamp gain (from input to line output) | 38 dB or 80X |
| Total gain | 63.5 dB or 1500X |
| Power amplifier gain from ext. inputs speaker output | 55 dB or 500X |

3. SENSITIVITY

| | |
|--|--|
| Input voltage for maximum output | Input 1: 15 mv RMS Input 2: 45 mv RMS |
| Input voltage capability (maximum) | Input 1: 510 mv RMS Input 2: 1.6V RMS |
| Nominal Input impedance | Input 1: 470K OHMS Input 2: 69K OHMS |

4. NOISE (all controls flat, inputs shorted)

| | |
|---|--------------------------|
| Noise-to-full-output ratio — volume minimum | -78 dB below full output |
| — volume maximum | -78 dB below full output |

5. FREQUENCY RESPONSE

| | |
|---------------------------------------|-----------------------|
| At 10 Watt level | -3dB, 27 Hz to 21K Hz |
| Power bandwidth 1/2 power point | 30 Hz to 18K Hz |

MODEL 450 ELECTRICAL SPECIFICATIONS, continued

6. AUXILIARY OUTPUTS

| | |
|----------------------|------------|
| Output Voltage | 250 mv RMS |
| Impedance | .5000 ohms |
| Booster Output | 275 mv RMS |
| Impedance | 1 K ohms |

7. DISTORTION CIRCUIT (all controls flat, distortion control and volume control max.)

| | |
|--|----------------|
| Minimum Input Required to Clip Power Amp | 425 Microvolts |
|--|----------------|

8. RANGE OF TONE CONTROLS

| | |
|---------------------------|--------------------------------------|
| Bass | +15 dB Boost, -15 dB cut @ 50 Hz |
| Treble | +15 dB Boost, -25 dB cut @ 10KHz |
| Mid-Range | +7 dB Boost, -30 dB cut @ 400 Hz |
| Bright Switch Boost | 6 dB per octave from 200 Hz to 5 KHz |

9. RANGE OF GRAPHIC EQUALIZER

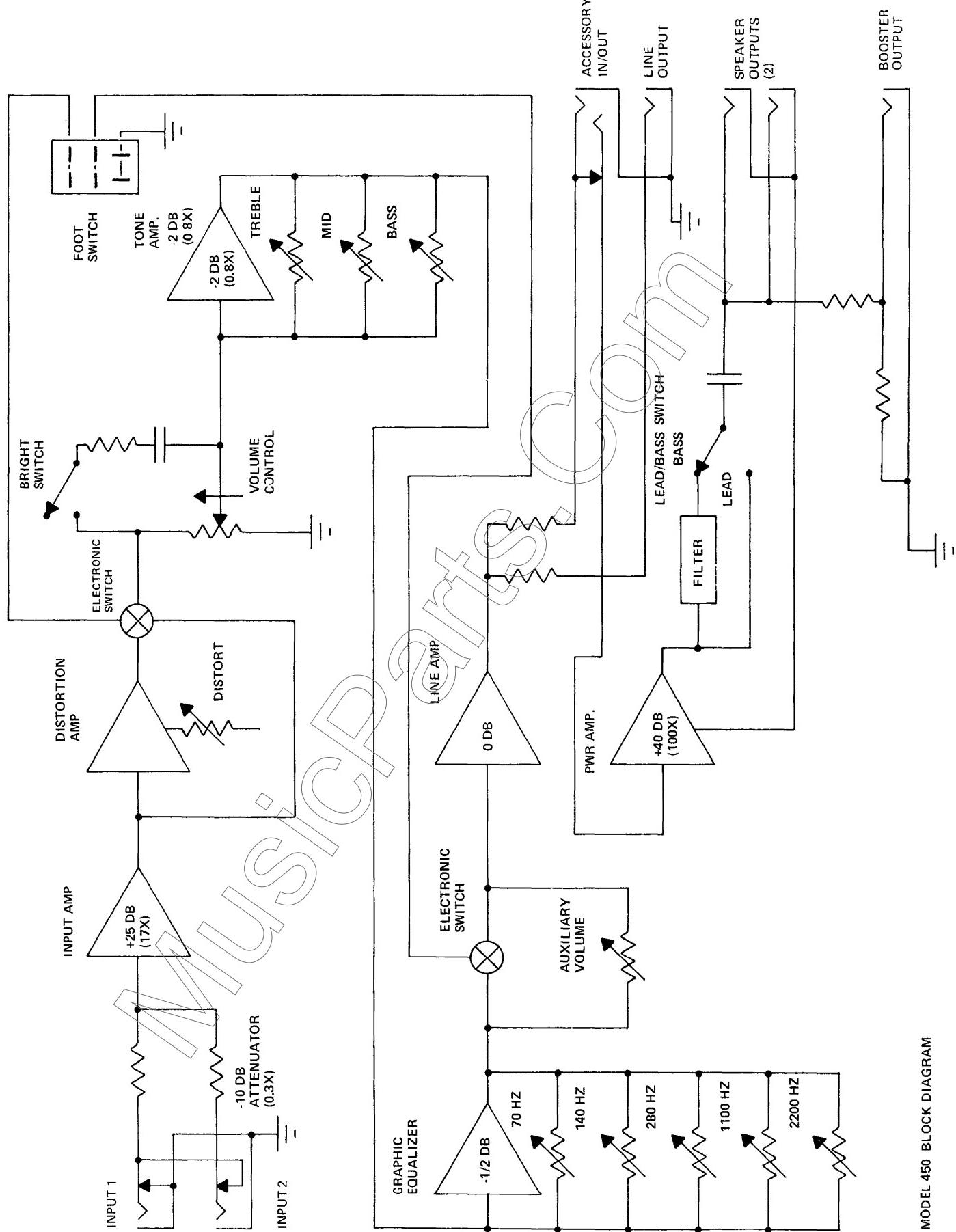
| | |
|-----------------|------------------|
| Section 1 | ±16 dB @ 70 Hz |
| Section 2 | ±16 dB @ 140 Hz |
| Section 3 | ±16 dB @ 280 Hz |
| Section 4 | ±16 dB @ 1100 Hz |
| Section 5 | ±16 dB @ 2200 Hz |

**AMPLIFIER LINE VOLTAGE REQUIREMENTS
FOR OPERATION IN U.S.A. AND FOREIGN COUNTRIES**

1. 107 Volts Line..... Used when supply line is 100V – 50/60 Hz
Use 5A, 125V Slo-Blo Fuse

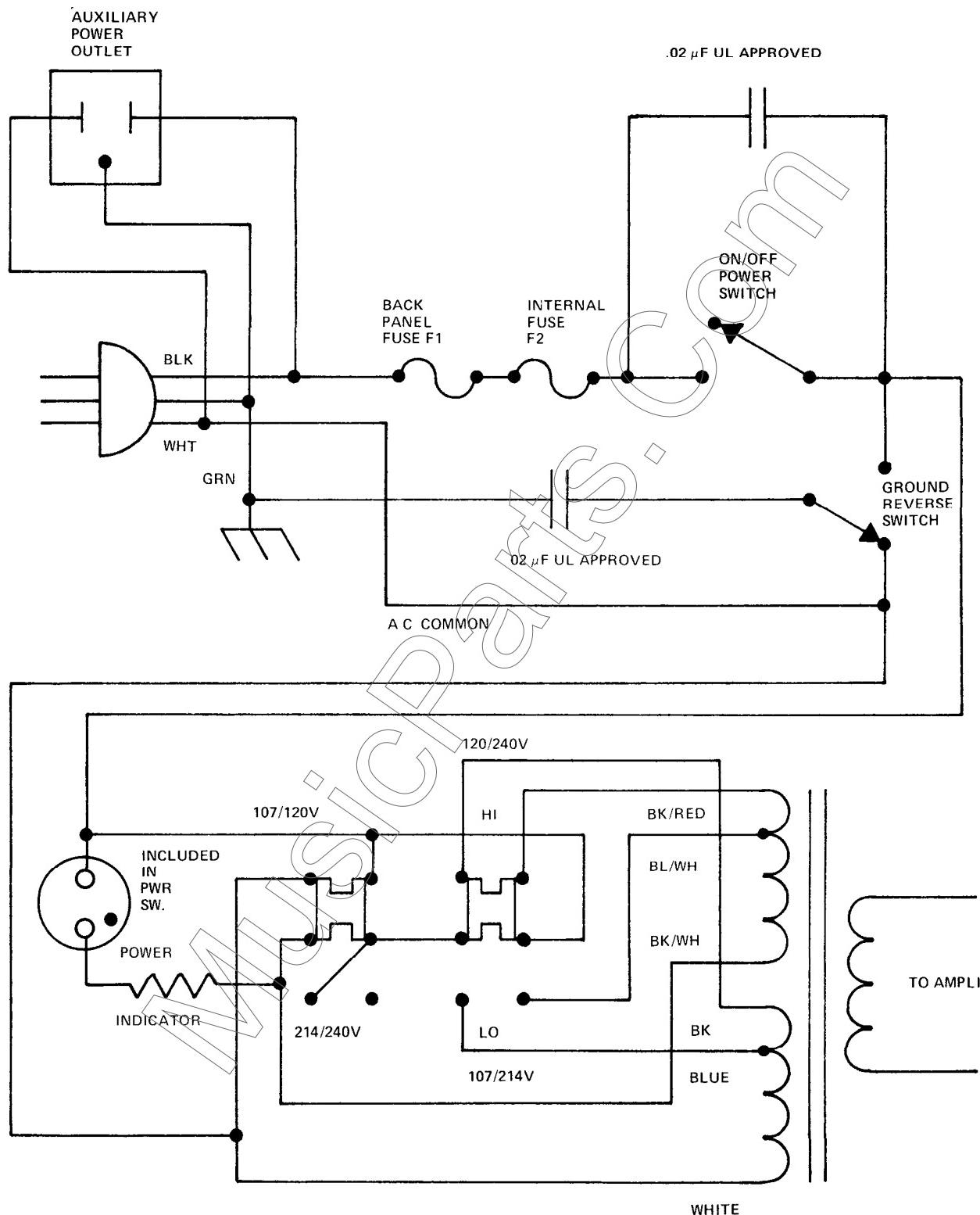
as in Japan or
Used when supply line is rated 110V
CAUTION: Do not use 107V tap with
120V line
2. 120 Volts Line..... Used in U.S.A. or where Line Voltage
is specified as 117V or 120V –
50/60 Hz Lines
3. 214 Volts Line..... Used where Line is specified as 210V or
220V AC – 50/60 Hz
(mostly European Countries)
CAUTION: Do not use this tap with 225V,
230V or 240V Lines
4. 240 Volts Line..... Used with 225, 230, and 240 Volts –
50/60 Hz Lines
(many European countries)

MUSICparts

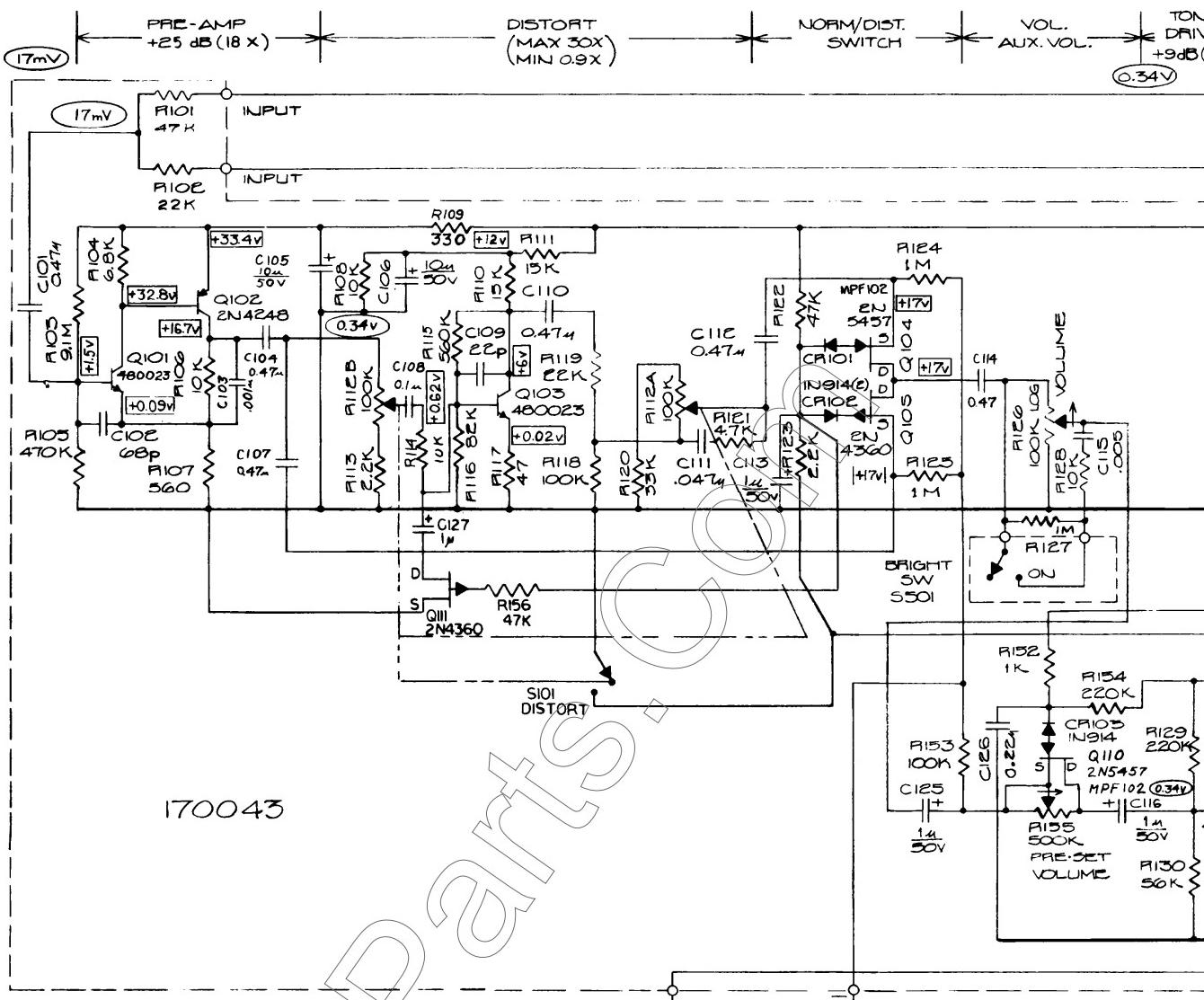


MODEL 450 BLOCK DIAGRAM

A.C. WIRING DIAGRAM MODEL 450



F1: FOR 107-120V, USE 5A, 125V SLO BLO
FOR 214-240V, USE 3A, 250V SLO BLO



170043

7. SEE VIEWS "A" & "B" FOR TABULATION WHEN
PC BOARD 170043 IS USED.

6. AC. VOLTAGES AT 1KHZ FROM GND.

5. DC. VOLTAGES TAKEN FROM CHASSIS GND,
NO SIGNAL APPLIED AND 120V, 60HZ LINE.

4. ALL CAPACITORS IN μ F UNLESS NOTED OTHERWISE.

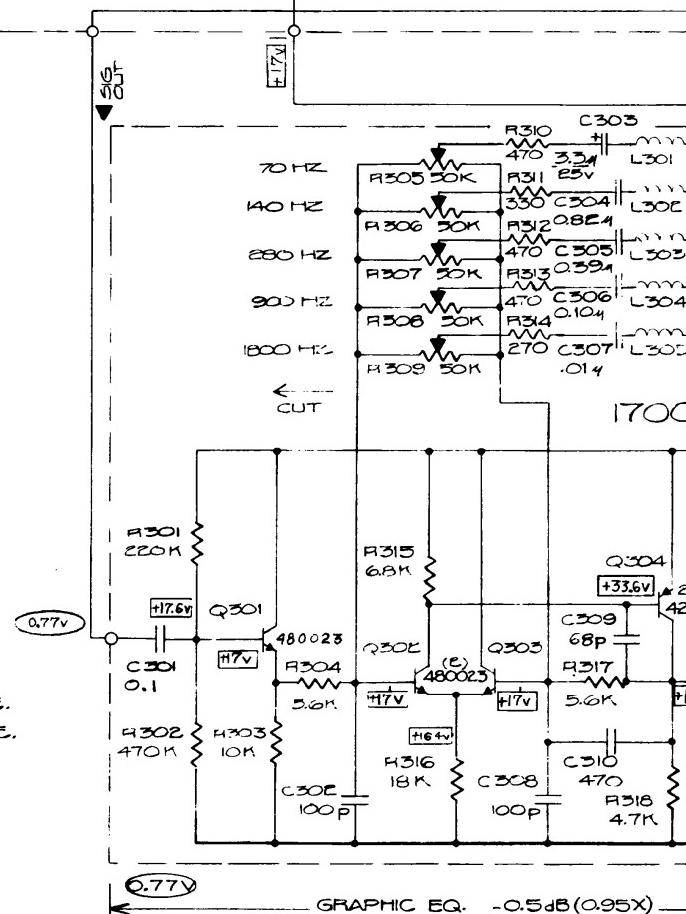
3. ALL RESISTORS: $1\text{k}\Omega, \pm 5\%$ UNLESS NOTED OTHERWISE.

2. R436, R437 FACTORY SELECTED, NOT ALL UNITS.

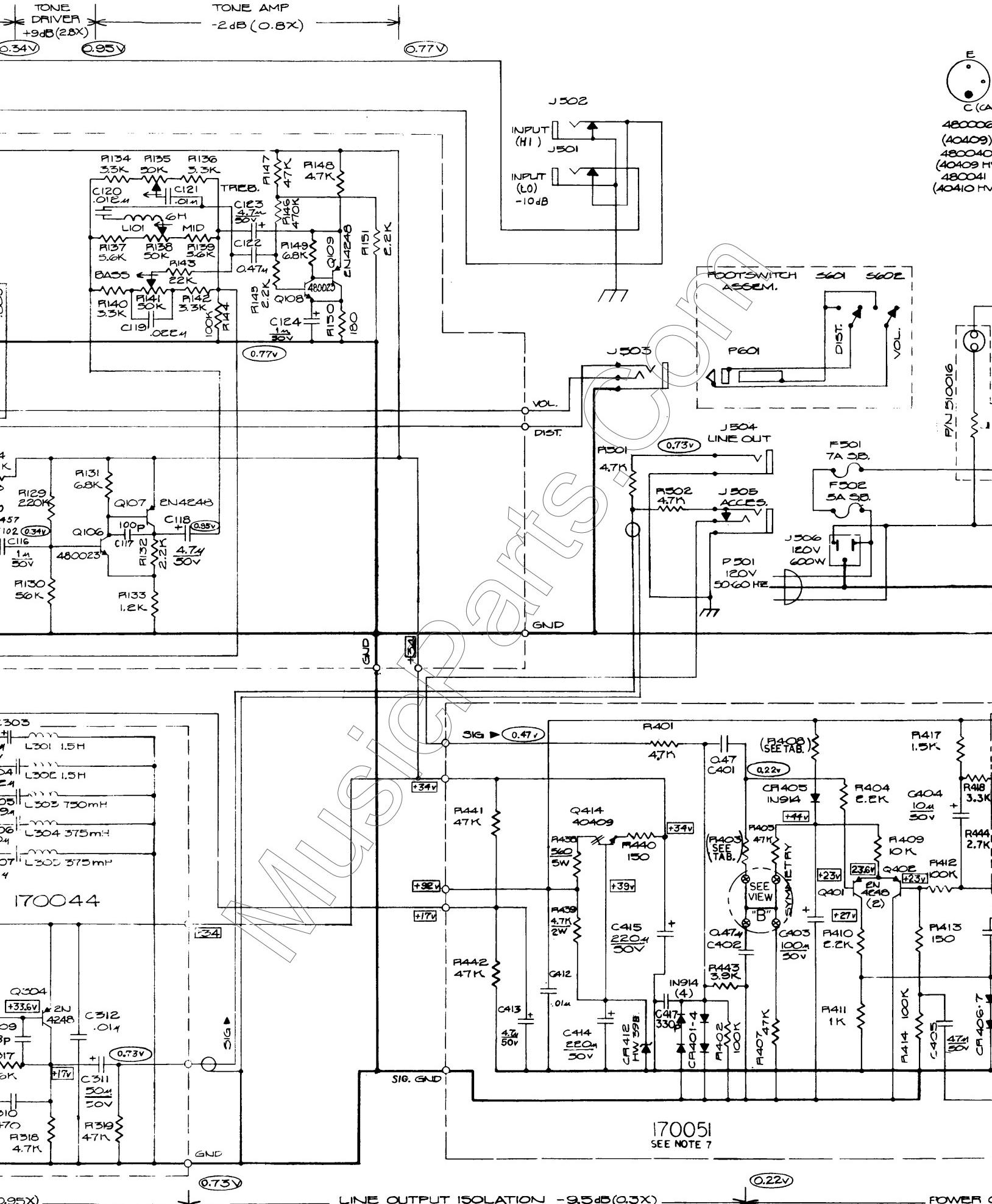
1. LAST REFERENCE DESIGNATIONS:

R156, R319, R445. CR103, CR412. R504
Q110, Q304, Q415. C126, C319, C503
C416. L101, L501, L305. S506, F502
S1501, T501. S602. P601. J509.

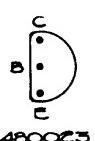
NOTES:



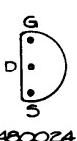
GRAPHIC EQ. -0.5dB (0.95x)



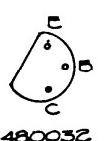
E
 B
 C (CASE)
 480006
 (40409)
 480040
 (40409 HV)
 480041
 40410 HV)



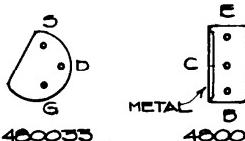
480023



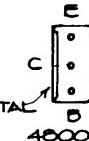
480024
(2N5457)



480032
(2N4248)



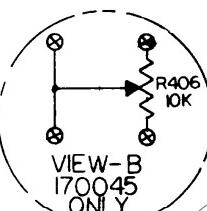
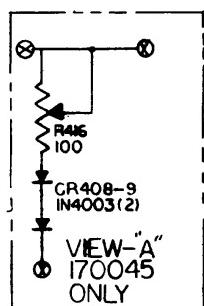
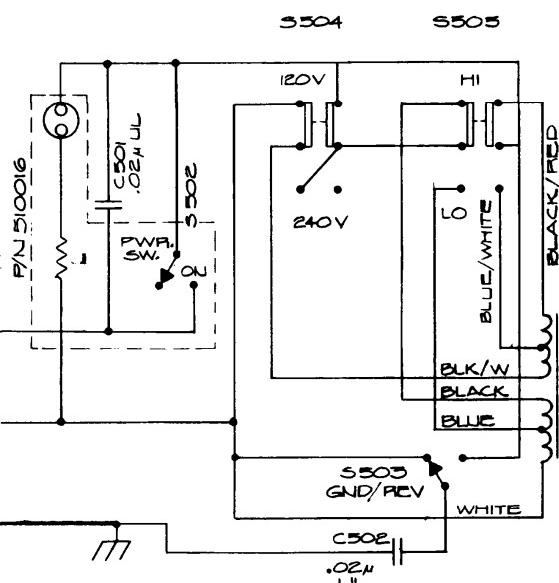
480033
(2N4360)



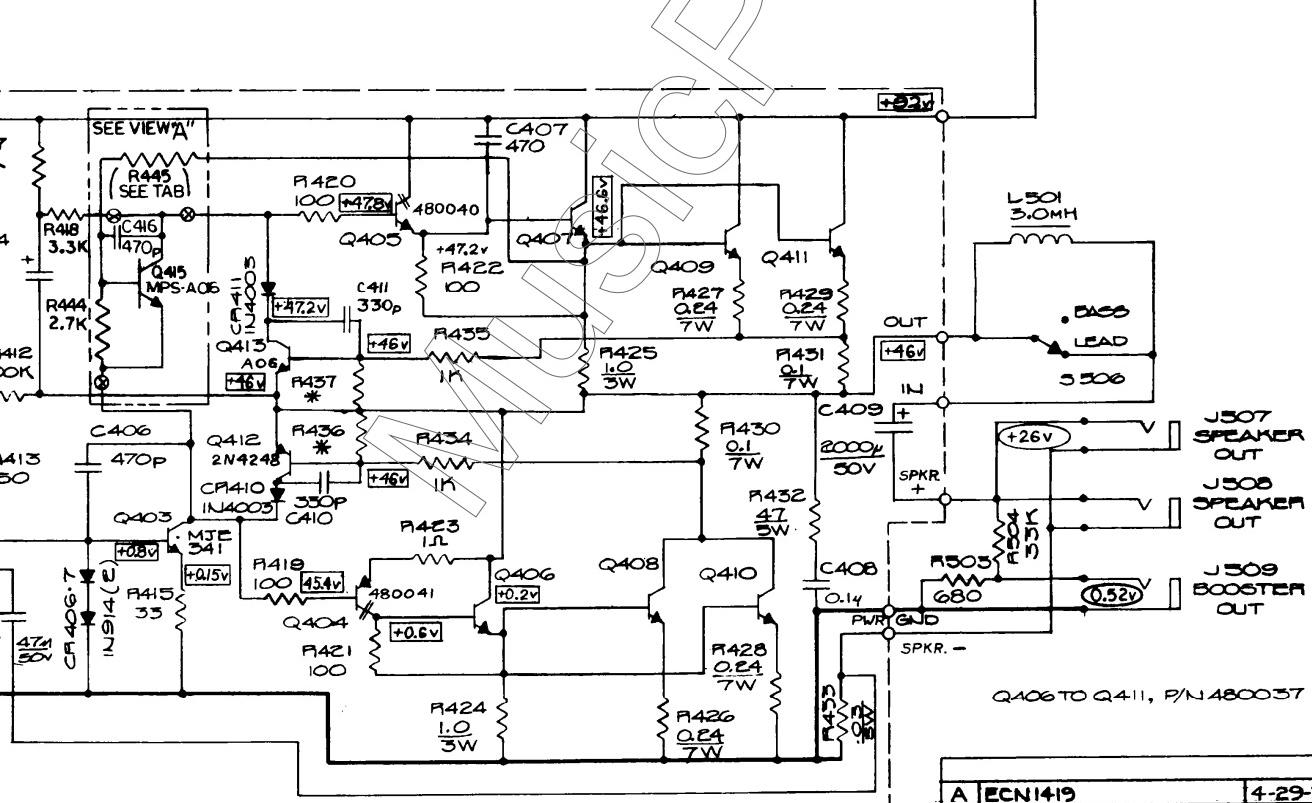
480059
(MJE341)

TRANSISTOR
VIEWS

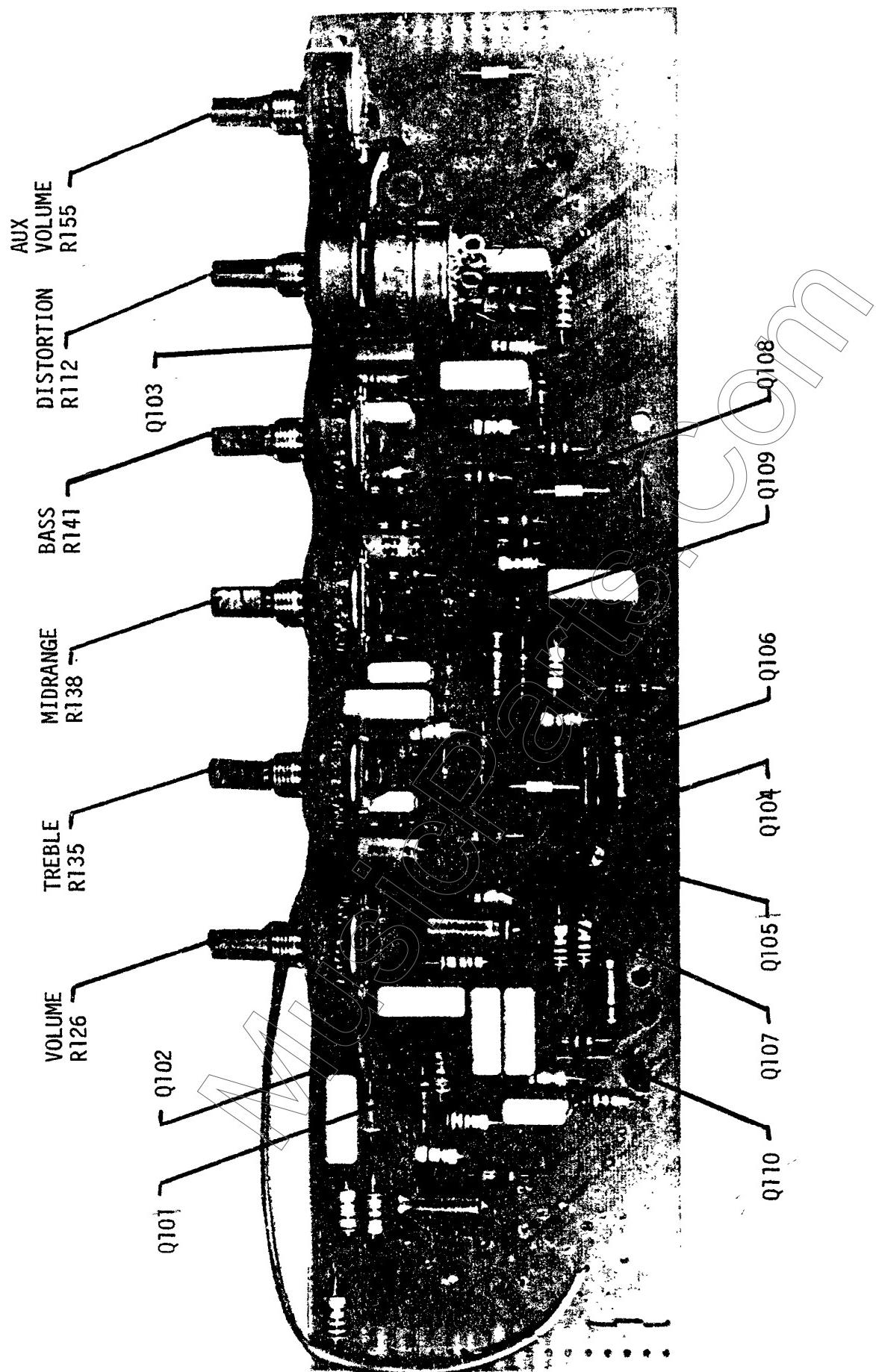
BOTTOM



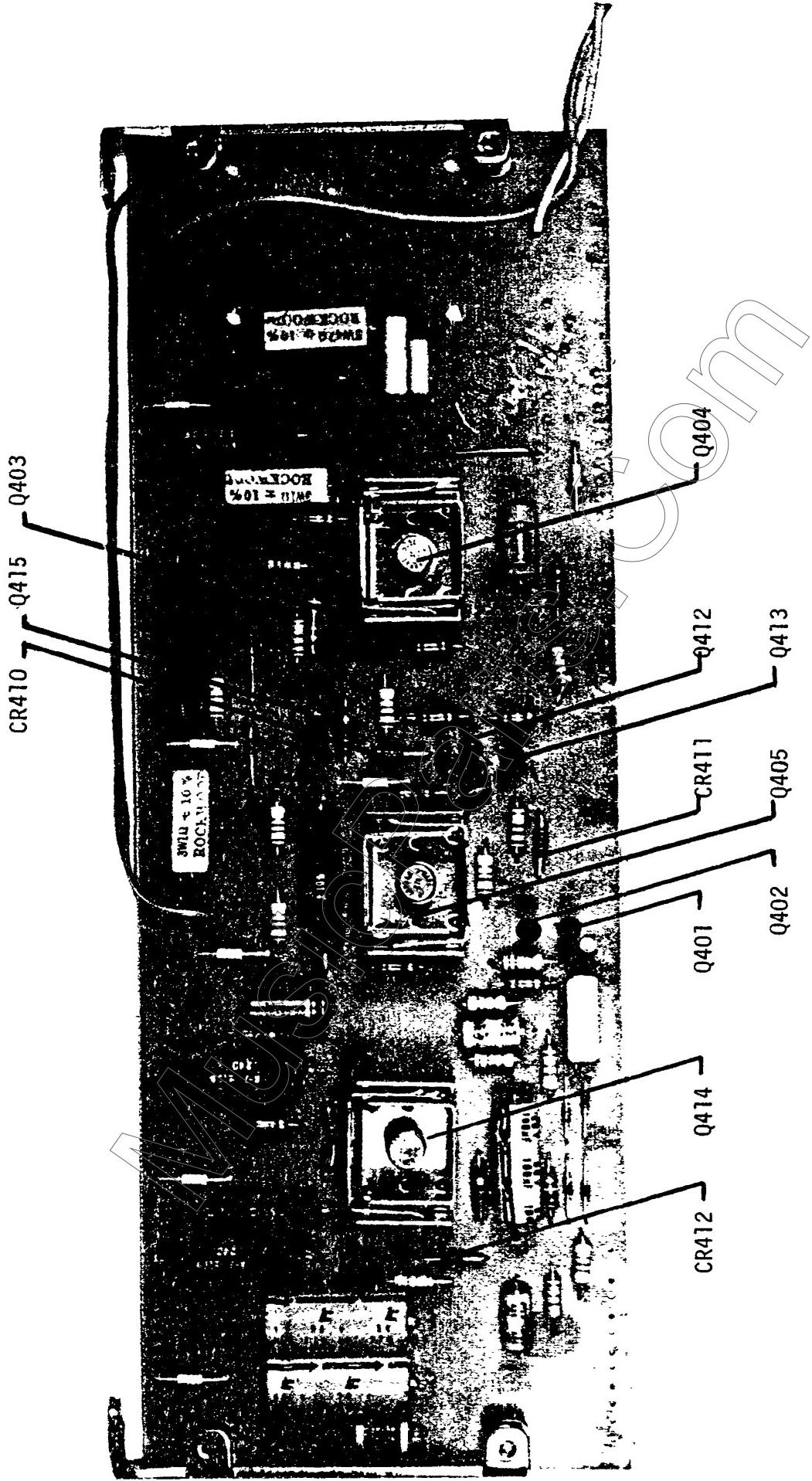
| TABULATION | |
|------------|---------------|
| RES. NO. | 170045 170051 |
| 403 | 47K 100K |
| 408 | 15K 18K |
| 445 | 680 |



| | |
|------------------------|-----------------------------|
| A ECN1419 | 4-29-74 WS |
| SCALE: NONE | APPROVED BY: |
| DATE: 9-18-73 | INITIALS: <i>Jack Swift</i> |
| REMARKS: | |
| SCHEMATIC 450 | |
| ACOUSTIC CONTROL CORP. | DRAWING NO. 1447-A |

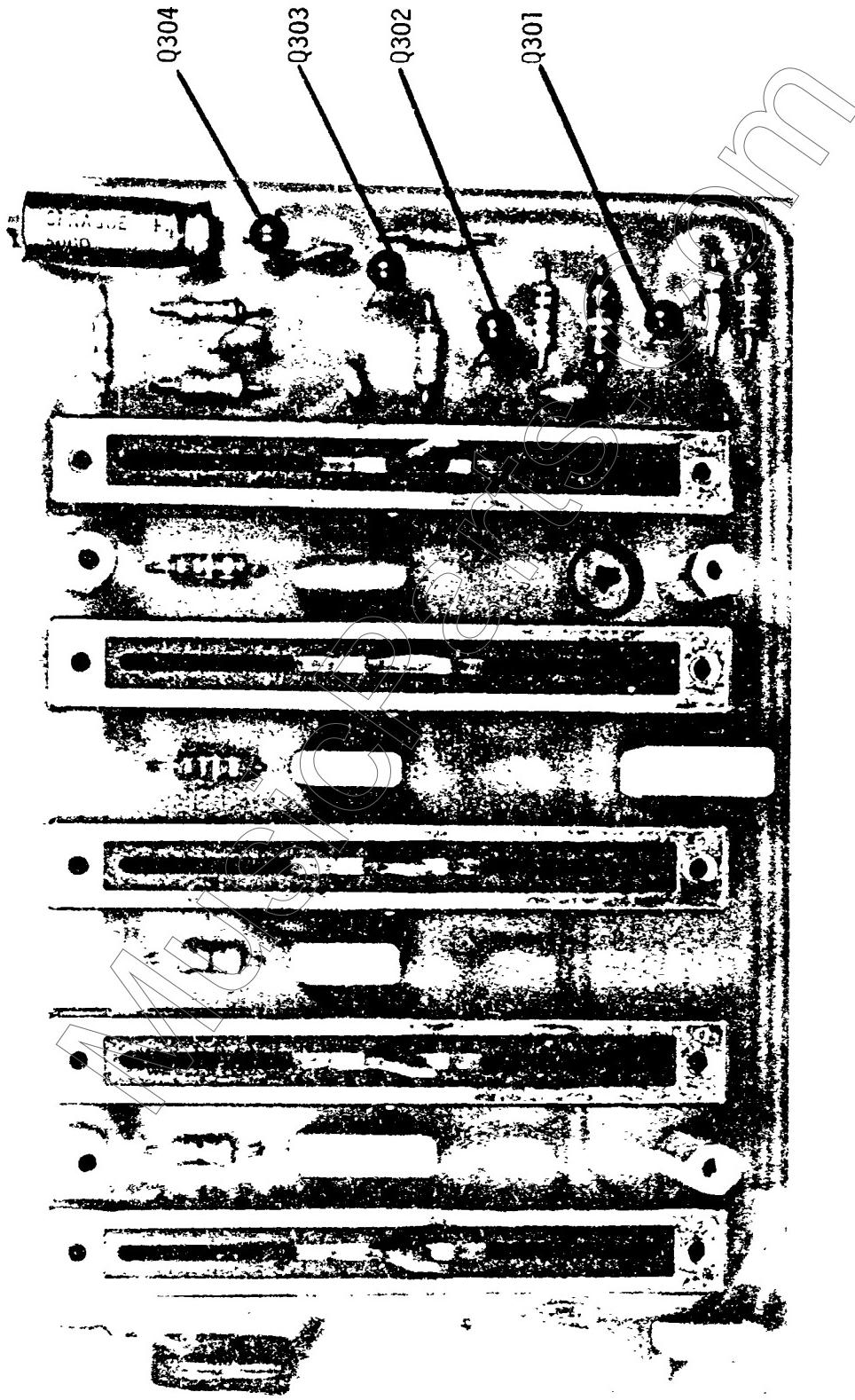


PICTORIAL
MODEL 450 - PREAMP ASSEMBLY 830023
SCHEMATIC 1447A



PICTORIAL
MODEL 450 - POWER AMP CIRCUIT BOARD ASSEMBLY 830029
SCHEMATIC 1447A

PICTORIAL
MODEL 450 - GRAPHIC EQ ASSEMBLY 830025
SCHEMATIC 1447A



PARTS LIST
MODEL 450 - PREAMP ASSEMBLY 830023
SCHEMATIC 1447A

| Schematic Reference | DESCRIPTION | Acoustic Part No. |
|---------------------|---|-------------------|
| PCB1 | Printed Circuit Board | 170043 |
| Q 101 | Transistor, NPN, 2N2484 | 4800023 |
| Q 102 | Transistor, PNP, 2N41248 | 4800032 |
| Q 103 | Transistor, NPN, 2N2484 | 4800023 |
| Q 104 | Field Effect Transistor, N-Chan, 2N5457 | 4800024 |
| Q 105 | Field Effect Transistor, P-Chan, 2N4360 | 4800033 |
| Q 106 | Transistor, NPN, 2N2484 | 4800023 |
| Q 107 | Transistor, PNP, 2N4248 | 4800032 |
| Q 108 | Transistor, NPN, 2N2484 | 4800023 |
| Q 109 | Transistor, PNP, 2N4248 | 4800032 |
| Q 110 | Field Effect Transistor, N-Chan, 2N5457 | 4800024 |
| Q 111 | Field Effect Transistor, P-Chan, 2N4360 | 4800033 |
| CR101 | Diode, 1N914 | 4800005 |
| CR102 | Diode, 1N914 | 4800005 |
| CR103 | Diode, 1N914 | 4800005 |
| L 101 | Inductor, 6mY | 1800007 |
| C 101 | Capacitor, .47mf, Mylar, 100V | 1520029 |
| C 102 | Capacitor, .68pf, Disc, 1KV | 1510002 |
| C 103 | Capacitor, .001mf, Disc, 500V | 1510008 |
| C 104 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 105 | Capacitor, 10mf, Electrolytic, 50V | 1530002 |
| C 106 | Capacitor, 10mf, Electrolytic, 50V | 1530002 |
| C 107 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 108 | Capacitor, .1mf, Mylar, 100V | 152015 |
| C 109 | Capacitor, .22pf, Disc, 1KV | 151001 |
| C 110 | Capacitor, .41mf, Mylar, 100V | 152029 |
| C 111 | Capacitor, .047mf, Mylar, 100V | 152013 |
| C 112 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 113 | Capacitor, .1mf, Electrolytic, 50V | 153001 |
| C 114 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 115 | Capacitor, .005mf, Disc, 500V | 151012 |
| C 116 | Capacitor, .1mf, Electrolytic, 50V | 153001 |
| C 117 | Capacitor, 100pf, Disc, 1KV | 151003 |
| C 118 | Capacitor, 4.7mf, Electrolytic, 50V | 153015 |
| C 119 | Capacitor, .022mf, Mylar, 100V | 152009 |
| C 120 | Capacitor, .012mf, Mylar, 100V | 152007 |
| C 121 | Capacitor, .01mf, Mylar, 100V | 152006 |
| C 122 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 123 | Capacitor, 4.7mf, Electrolytic, 50V | 153015 |
| C 124 | Capacitor, 1mf, Electrolytic, 50V | 153001 |
| C 125 | Capacitor, 1mf, Electrolytic, 50V | 153001 |
| C 126 | Capacitor, .22mf, Mylar, 75V | 152019 |
| C 127 | Capacitor, 1mf, Tantalum, 35V | 154004 |
| R 101 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 102 | Resistor, 22K ohm, 1/2 watt | 476322 |
| R 103 | Resistor, 9.1M ohm, 1/2 watt | 476591 |
| R 104 | Resistor, 6.8K ohm, 1/2 watt | 476268 |
| R 105 | Resistor, 470K ohm, 1/2 watt | 476447 |
| R 106 | Resistor, 10K ohm, 1/2 watt | 476310 |
| R 107 | Resistor, 560 ohm, 1/2 watt | 476156 |
| R 108 | Resistor, 10K ohm, 1/2 watt | 476310 |

| Schematic Reference | DESCRIPTION | Acoustic Part No. |
|---------------------|--------------------------------|-------------------|
| R 109 | Resistor, 330 ohm, 1/2 watt | 476133 |
| R 110 | Resistor, 15K ohm, 1/2 watt | 476315 |
| R 111 | Resistor, 15K ohm, 1/2 watt | 476315 |
| R 112 | Potentiometer, 100K ohm, Dual | 475044 |
| R 113 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 114 | Resistor, 10K ohm, 1/2 watt | 476310 |
| R 115 | Resistor, 560K ohm, 1/2 watt | 476456 |
| R 116 | Resistor, 82K ohm, 1/2 watt | 476382 |
| R 117 | Resistor, 47 ohm, 1/2 watt | 476047 |
| R 118 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 119 | Resistor, 22K ohm, 1/2 watt | 476322 |
| R 120 | Resistor, 33K ohm, 1/2 watt | 476333 |
| R 121 | Resistor, 4.7K ohm, 1/2 watt | 476247 |
| R 122 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 123 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 124 | Resistor, 1M ohm, 1/2 watt | 476310 |
| R 125 | Resistor, 1M ohm, 1/2 watt | 476510 |
| R 126 | Potentiometer, 100K ohm, Log | 475040 |
| R 127 | Resistor, 1M ohm, 1/2 watt | 476510 |
| R 128 | Resistor, 10K ohm, 1/2 watt | 476310 |
| R 129 | Resistor, 220K ohm, 1/2 watt | 476422 |
| R 130 | Resistor, 56K ohm, 1/2 watt | 476356 |
| R 131 | Resistor, 68K ohm, 1/2 watt | 476368 |
| R 132 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 133 | Resistor, 1.2K ohm, 1/2 watt | 476212 |
| R 134 | Resistor, 3.3K ohm, 1/2 watt | 476233 |
| R 135 | Potentiometer, 50K ohm, w/Step | 475043 |
| R 136 | Resistor, 3.3K ohm, 1/2 watt | 476233 |
| R 137 | Resistor, 5.6K ohm, 1/2 watt | 476256 |
| R 138 | Potentiometer, 50K ohm, w/Step | 475043 |
| R 139 | Resistor, 5.6K ohm, 1/2 watt | 476256 |
| R 140 | Resistor, 3.3K ohm, 1/2 watt | 476233 |
| R 141 | Potentiometer, 50K ohm, w/Step | 475043 |
| R 142 | Resistor, 3.3K ohm, 1/2 watt | 476233 |
| R 143 | Resistor, 22K ohm, 1/2 watt | 476322 |
| R 144 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 145 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 146 | Resistor, 470K ohm, 1/2 watt | 476447 |
| R 147 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 148 | Resistor, 4.7K ohm, 1/2 watt | 476247 |
| R 149 | Resistor, 6.8K ohm, 1/2 watt | 476268 |
| R 150 | Resistor, 180 ohm, 1/2 watt | 476118 |
| R 151 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 152 | Resistor, 1K ohm, 1/2 watt | 476210 |
| R 153 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 154 | Resistor, 220K ohm, 1/2 watt | 476422 |
| R 155 | Potentiometer, 500K ohm, Log | 475041 |
| R 156 | Vesistor, 47K ohm, 1/2 watt | 476347 |

PARTS LIST
MODEL 450 - POWER AMP CIRCUIT BOARD ASSEMBLY 830029
SCHEMATIC 1447A

| Schematic Reference | Description | Acoustic Part No. |
|---------------------|--|-------------------|
| PC34 | Printed Circuit Board | 170051 |
| Q 401 | Transistor, PNP, 2N4248 | 480032 |
| Q 402 | Transistor, PNP, 2N4248 | 480032 |
| Q 403 | Transistor, NPN, MJE 341 | 480039 |
| Q 404 | Transistor, PNP, w/heatsink | 480041 |
| Q 405 | Transistor, NPN, w/heatsink | 480040 |
| Q 406 | Transistor, NPN, Driver, Negative | 480037 |
| Q 407 | Transistor, NPN, Driver, Positive | 480037 |
| Q 408 | Transistor, NPN, | 480037 |
| Q 409 | Transistor, NPN, | 480037 |
| Q 410 | Transistor, NPN, | 480037 |
| Q 411 | Transistor, NPN, | 480037 |
| Q 412 | Transistor, PNP, 2N4248 | 480032 |
| Q 413 | Transistor, NPN, MPS A06 | 480038 |
| Q 414 | Transistor, NPN, Regulator, 40409 | 480006 |
| Q 415 | Transistor, NPN, Bias, MPS A06 | 480038 |
| CR401 | Diode, IN914 | 480005 |
| CR402 | Diode, IN914 | 480005 |
| CR403 | Diode, IN914 | 480005 |
| DR404 | Diode, IN914 | 480005 |
| CR405 | Diode, IN914 | 480005 |
| CR406 | Diode, IN914 | 480005 |
| CR407 | Diode, IN914 | 480005 |
| CR408 | Diode, IN4003, (170045 bd only) | 480028 |
| CR409 | Diode, IN4003, (170045 bd only) | 480028 |
| CR410 | Diode, IN4003, | 480028 |
| CR411 | Diode, Zener, LN4754, HW39B | 480022 |
| CR412 | Capacitor, .47uf, Mylar, 100V | 152029 |
| C 401 | Capacitor, .47mf, Mylar, 100V | 152029 |
| C 402 | Capacitor, .100mf, Electrolytic, 50V | 153006 |
| C 403 | Capacitor, .10mf, Electrolytic, 50V | 153002 |
| C 404 | Capacitor, .22mf, Electrolytic, 50V | 153004 |
| C 405 | Capacitor, .470pf, Disc, 500V | 151006 |
| C 406 | Capacitor, .470pf, Disc, 500V | 151006 |
| C 407 | Capacitor, .1mf, Mylar, 250V | 152026 |
| C 408 | Capacitor, .2000 pf, Electrolytic, 80V | 153023 |
| C 409 | Capacitor, .330pf, Disc, 500V | 151005 |
| C 410 | Capacitor, .330pf, Disc, 500V | 151005 |
| C 411 | Capacitor, .01mf, Mylar, 250V | 152031 |
| C 412 | Capacitor, .47mf, Electrolytic, 50V | 153015 |
| C 413 | Capacitor, .220mf, Electrolytic, 50V | 153008 |
| C 414 | Capacitor, .220mf, Electrolytic, 50V | 153008 |
| C 415 | Capacitor, .470pf, Disc, 500V | 151006 |
| R 401 | Resistor, 4.7K ohm, 1/2 watt | 151005 |
| R 402 | Resistor, 100K ohm, 1/2 watt | 476247 |
| R 403 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 404 | Resistor, 2.2K ohm, 1/2 watt | 476410 |
| R 405 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 406 | Triopot, 10K ohm, (170045 bd only) | 475047 |

| Schematic Reference | DESCRIPTION | Acoustic Part No. |
|---------------------|------------------------------------|-------------------|
| R 407 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 408 | Resistor, 18K ohm, 1/2 watt | 476318 |
| R 409 | Resistor, 10K ohm, 1/2 watt | 476310 |
| R 410 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 411 | Resistor, 1K ohm, 1/2 watt | 476210 |
| R 412 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 413 | Resistor, 150 ohm, 1/2 watt | 476115 |
| R 414 | Resistor, 100K ohm, 1/2 watt | 476410 |
| R 415 | Resistor, 33 ohm, 1/2 watt | 476333 |
| R 416 | Triopot, 100 ohm, (170045 bd only) | 475045 |
| R 417 | Resistor, 1.5K ohm, 1/2 watt | 476215 |
| R 418 | Resistor, 3.3K ohm, 1/2 watt | 476233 |
| R 419 | Resistor, 100 ohm, 1/2 watt | 476110 |
| R 420 | Resistor, 100 ohm, 1/2 watt | 476110 |
| R 421 | Resistor, 100 ohm, 1/2 watt | 476110 |
| R 422 | Resistor, 100 ohm, 1/2 watt | 476110 |
| R 423 | Resistor, 1 ohm, 1/2 watt | 478001 |
| R 424 | Resistor, 1 ohm, 3 watt | 464910 |
| R 425 | Resistor, 1 ohm, 3 watt | 464910 |
| R 426 | Resistor, .24 ohm, 7 watt | 461005 |
| R 427 | Resistor, .24 ohm, 7 watt | 461005 |
| R 428 | Resistor, .24 ohm, 7 watt | 461005 |
| R 429 | Resistor, .24 ohm, 7 watt | 461005 |
| R 430 | Resistor, .1 ohm, 7 watt | 461004 |
| R 431 | Resistor, .1 ohm, 7 watt | 461004 |
| R 432 | Resistor, .24K ohm, 1/2 watt | 463047 |
| R 433 | Resistor, .03 ohm, 5 watt | 463730 |
| R 434 | Resistor, 1K ohm, 1/2 watt | 476210 |
| R 435 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 436 | Resistor, 2.2K ohm, 1/2 watt | 476222 |
| R 437 | Resistor, 560 ohm, 5 watt | 463156 |
| R 438 | Resistor, 4.7K ohm, 2 watt | 472247 |
| R 439 | Resistor, 150 ohm, 1/2 watt | 476115 |
| R 440 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 441 | Resistor, 47K ohm, 1/2 watt | 476347 |
| R 442 | Resistor, 47K ohm, 1/2 watt | 476239 |
| R 443 | Resistor, 3.9K ohm, 1/2 watt | 476239 |
| R 444 | Resistor, 3.9K ohm, 1/2 watt | 476168 |
| R 445 | Resistor, 680 ohm, 1/2 watt | 476168 |

PARTS LIST
MODEL 450 - GRAPHIC EQ ASSEMBLY 830025
SCHEMATIC 1447A

| Schematic Reference | Description | Acoustic Part No. |
|---------------------|------------------------------------|-------------------|
| PCB3 | Printed Circuit Board | 170044 |
| Q 301 | Transistor, NPN, 2N2484 | 480023 |
| Q 302 | Transistor, NPN, 2N2484 | 480023 |
| Q 303 | Transistor, NPN, 2N2484 | 480023 |
| Q 304 | Transistor, PNP, 2N4248 | 480032 |
| L 301 | Inductor, 1.5H | 180002 |
| L 302 | Inductor, 1.5H | 180002 |
| L 303 | Inductor, 750MHY | 180005 |
| L 304 | Inductor, 375MHY | 180004 |
| L 305 | Inductor, 375MHY | 180004 |
| C 301 | Capacitor, .1mf, Mylar, 100V | 152015 |
| C 302 | Capacitor, 100pf, Disc, 1KV | 151003 |
| C 303 | Capacitor, 3.3mf, Tantalum | 154007 |
| C 304 | Capacitor, .82mf, Mylar, 250V | 152030 |
| C 305 | Capacitor, .39mf, Mylar, 250V | 152028 |
| C 306 | Capacitor, .10mf, Mylar, 250V | 152026 |
| C 307 | Capacitor, .01mf, Mylar, 250V | 152031 |
| C 308 | Capacitor, 100pf, Disc, 1KV | 151003 |
| C 309 | Capacitor, 68pf, Disc, 1KV | 151002 |
| C 310 | Capacitor, 470pf, Disc, 500V | 151006 |
| C 311 | Capacitor, 50mf, Electrolytic, 50V | 153005 |
| C 312 | Capacitor, .01mf, Mylar, 100V | 152031 |
| R 301 | Resistor, 220K ohm, 1/2 watt | 476422 |
| R 302 | Resistor, 470K ohm, 1/2 watt | 476447 |
| R 303 | Resistor, 10K ohm, 1/2 watt | 476310 |
| R 304 | Resistor, 5.6K ohm, 1/2 watt | 476256 |
| R 305 | Slide Potentiometer, 50K ohm | 475039 |
| R 306 | Slide Potentiometer, 50K ohm | 475039 |
| R 307 | Slide Potentiometer, 50K ohm | 475039 |
| R 308 | Slide Potentiometer, 50K ohm | 475039 |
| R 309 | Slide Potentiometer, 50K ohm | 475039 |
| R 310 | Resistor, 470 ohm, 1/2 watt | 476147 |
| R 311 | Resistor, 330 ohm, 1/2 watt | 476133 |
| R 312 | Resistor, 470 ohm, 1/2 watt | 476147 |
| R 313 | Resistor, 470 ohm, 1/2 watt | 476147 |
| R 314 | Resistor, 270 ohm, 1/2 watt | 476127 |
| R 315 | Resistor, 6.8K ohm, 1/2 watt | 476268 |
| R 316 | Resistor, 18K ohm, 1/2 watt | 476318 |
| R 317 | Resistor, 5.6K ohm, 1/2 watt | 476256 |
| R 318 | Resistor, 4.7K ohm, 1/2 watt | 476247 |
| R 319 | Resistor, 47K ohm, 1/2 watt | 476347 |

PARTS LIST
MODEL 450 - CHASSIS WIRING
SCHEMATIC 1447A

| Schematic Reference | Description | Acoustic Part No. |
|---------------------|---------------------------------------|-------------------|
| T 501 | Transformer, Supply | 560015 |
| BR501 | Bridge Rectifier 10A | 480019 |
| C 501 | Capacitor, .02mf U.L. | 155001 |
| C 503 | Capacitor, 7800mf, Electrolytic, 100V | 153013 |
| L 501 | Choke, 3.0MHY | 180010 |
| P 501 | A/C Line Cord | 600054 |
| P 501 | Fuse, 7A Pigtail | 510031 |
| P 502 | Fuse, 5A SB | 510005 |
| J 501 | Jack, N/Closed | 210003 |
| J 502 | Jack, N/Closed | 210003 |
| J 503 | Jack, Footswitch | 210027 |
| J 504 | Jack, Line Out | 210002 |
| J 505 | Jack, Access In/Out | 210039 |
| J 506 | A/C Outlet | 210052 |
| J 507 | Jack, Speaker Out | 210002 |
| J 508 | Jack, Speaker Out | 210002 |
| J 509 | Jack, Booster Out | 210002 |
| S 501 | Switch, BRT | 510017 |
| S 502 | Switch, Power On/Off | 510016 |
| S 503 | Switch, Ground Reverse | 510017 |
| S 506 | Switch, Lead/Bass | 510017 |
| R 501 | Resistor, 4.7K ohm, 1/2 watt | 476247 |
| R 502 | Resistor, 4.7K ohm, 1/2 watt | 476247 |
| R 503 | Resistor, 680 ohm, 1/2 watt | 476168 |
| R 504 | Resistor, 33K ohm, 1/2 watt | 476333 |